

nucleus, stretching it and finally breaking through it (fig. 15 a). I have found this condition regularly in all the ovules I have examined. The various organs only sketched out in slight outlines in figs. 12 and 13, are much more distinctly seen in such a germ at this stage. We may here distinguish clearly two strongly marked divisions, viz. 1, *the germinal body*; 2, *the first leaf*.

I have already used the term germinal body (Keimkörper) for the part morphologically corresponding in the germinating *Selaginella*, for that, namely, out of which develops the terminal bud of the stem and the root, which phenomena I shall discuss in the following section, since the immediately succeeding stages of the embryo, while breaking through, do not essentially differ from this in form.

[To be continued.]

IX.—*Notice of a deposit of Fossil Diatomaceæ in Aberdeenshire.*

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It is unnecessary to insist here upon the very general occurrence of silex in fresh and salt water, or the means by which it is dissolved and retained in solution; the very general distribution of Diatomaceous plants is a sufficient proof, if any such need be brought forward. It may be, that by some process like that called electrotype, the organisms in question are enabled to perpetuate their own beautiful forms, the impressions being taken in the purest transparent silex. The rapidity with which they are multiplied will account for the large deposits of fossil earth found in different parts of the world, and the indestructible nature of the mineral which they have the power of depositing in or upon their tissue enables us to recognize them long subsequently to the time when their vitality ceased.

In the month of March last, two different substances were sent to me for examination; they were described as having been found under a bed of clay at Premnay in the interior of Aberdeenshire. One of them consisted of small solid fragments of a dull white, the other had the form of a fine powder of a pure white. On examination it was found that the former consisted of decomposed felspar forming a kind of porcelain earth, the other had no small resemblance to some fossil earths with whose physical characters I was not unacquainted; accordingly, on submitting it to examination under the microscope, I found it to be entirely composed

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of *Diatomaceæ*. Being desirous of procuring additional information respecting the probable circumstances under which such a deposit might have taken place, I requested some particulars respecting it; my disappointment was considerable when informed that the decomposed felspar alone had been found under a bed of clay, but that the white powder was in reality the residue left after the use of peat as fuel, a quantity of which had been preserved, its peculiar appearance having attracted notice. The fact, however, is not less interesting when viewed in connection with a true fossil earth to be presently described, which was found by Mr. Murray, at Blackhouse near Peterhead, under a bed of peat, for specimens of which I am indebted to my friend Professor MacGillivray. The residue of the Premnay peat was found to consist of the following *Diatomaceæ* :—

<i>Eunotiaæ</i> *.	
Eunotia ocellata.	Cocconema lanceolatum.
E. tetradon.	Gomphonema lanceolatum ?
E. turgida.	<i>Naviculeæ.</i>
Himantidium Arcus.	†Navicula acrosphæria.
<i>Meridieæ.</i>	N. binodis.
Meridion circulare.	N. dicephala.
<i>Fragilarieæ.</i>	†N. major.
Fragilaria rhabdosoma.	N. nodosa β. striata.
<i>Meloseireæ.</i>	†N. viridis.
†Meloseira Italica.	Stauroneis lanceolata.
<i>Surirelleæ.</i>	S. linearis.
†Surirella bifrons.	S. Microstauron.
Synedra Ulna.	†S. Phœnicenteron.
<i>Cymbelleæ.</i>	<i>Tabellarieæ.</i>
Cymbella Ehrenbergii.	Tabellaria ventricosa.
	<i>Coscinodisceæ.</i>
	Coscinodiscus minor.

This last was detected by Mr. Thwaites, to whose assistance I am indebted in naming the species. Those marked † were in greatest quantity, and the *Meloseira Italica* was more abundant than the others; this species had not, so far as I am aware, been hitherto included in the list of British species, and I have found it in a living state very abundantly in several localities near Aberdeen; it generally occurs at the sources of cold springs.

The residue so rich in *Diatomaceæ*, remaining after burning peat from the Premnay bogs, renders it exceedingly probable that separate deposits of fossil *Diatomaceæ* may yet be detected there.

The specimen from Peterhead, in possession of Dr. MacGillivray, is a mass of small specific gravity having a laminated

* The names are adopted from Kützing's work on the *Diatomaceæ*.

structure with remains of vegetable fibre interspersed through it. It was found to contain nearly forty species of *Diatomaceæ*, viz.—

Eunotiaæ.

Epithemia alpestris.
 †E. gibba.
 E. ocellata.
 E. proboscidea.
 E. turgida.
 E. Zebra.
 †Eunotia Monodon.
 Himantidium Arcus.

Fragilariaæ.

Fragilaria rhabdosoma.

Meloseiraæ.

Meloseira Italica.
 M. subflexilis?

Surirellaæ.

Campylodiscus Clypeus.
 Surirella elliptica.
 S. Solea.
 Synedra capitata.

Cocconeideæ.

Cocconeis Pediculus.

Cymbelleæ.

†Cymbella Elrenbergii.
 C. cuspidata.
 †C. helvetica.
 †C. maculata.
 †Cocconema cymbiforme.
 Gomphonema minutum.
 G. pohliæforme.

Naviculeæ.

Navicula attenuata.
 †N. binodis.
 N. dicephala.
 †N. inflata.
 N. major.
 †N. oblonga.
 N. radiosa.
 N. rhomboides.
 N. viridis.
 Stauroneis lanceolata.
 Amphora ovalis.
 A. elliptica.

Tabellarieæ.

Tabellaria fenestrata.

Those marked † were most abundant.

X.—*Descriptions of Aphides.* By FRANCIS WALKER, F.L.S.

[Continued from p. 48.]

EIGHTEENTH GROUP.

This group may require subdivision, but it does not contain many species.

33. *Aphis Piceæ.*

Aphis Piceæ, Panz. Faun. Germ. 78. f. 22; Fabr. Rhyn. 302. 56; Zett. Faun. Lapp. i. 557. 1; Kalt. Mon. Pflanz. i. 141. 111.

Lachnus grossus, Kalt. Ent. Zeitung, 1846, 175.

The viviparous winged female. This is black, smooth, and shining: the front of the head is slightly convex: there are two impressions on the crown: the feelers are red, filiform, and hardly half the length of the body; their tips are black; the fourth joint is rather more than one-third of the length of the third, which is crenulated beneath; the fifth joint is a little longer than the fourth; the sixth is not half the length of the fifth; the seventh is extremely short: the eyes are black and prominent: the mouth